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STUDIES IN ECONOMIC GEOGRAPHY*

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(I) DEFINITIONS AND CLASSIFICATIONS

INTRODUCTION ; BASIC DEFINITIONS

In economic geography, lack of organization is at once a reproach and a handicap to the geographer. To remove both in some degree, especially the handicap, I have been led to devise and use a scheme of definitions and classifications, which is offered as tentative and at least workable. It is based upon the following thesis proposed by J. Russell Smith and restated by W. S. Tower:

“Economic geography is the description and interpretation of lands in terms of their usefulness to humanity. Its net result is the understanding of the relationship between the people of a district and their physical environment.”¹

“Economic geography is the study of the different types of environments in the relations they bear to the activities of human life.”²

These definitions do not err upon the side of being too narrow and are open to the objection of including the whole of anthropogeography. They are unquestionably geographical and stress a relationship between a physical complex and a human complex. The physical complex is called an environment, and convenience calls for an equally simple term to designate the human complex. For that purpose I use the word *economy*, which I define as a way or method by which living creatures, especially men, get or may get a living. Conversely, an *environment* is that part of the face of the earth with which living creatures, especially men, taken singly or in groups, are closely related in the process of getting a living. Using these terms to express the idea of Smith and Tower, *economic geography* is that part of anthropogeography which studies the relationships between environments and economies and deals with natural resources, industries, and the distribution of useful products.

Industrial geography is that part of economic geography which deals with the work by which useful products are obtained and manufactured.

Commercial geography is that part of economic geography which deals with the exchange of goods.

* Read at the twelfth annual meeting of the Association of American Geographers, Washington, D. C., December 30-31, 1915, and January 1, 1916.

¹ J. Russell Smith: *Economic Geography and Its Relation to Economic Theory and Higher Education*, *Bull. Amer. Geogr. Soc.*, Vol. 39, 1907, pp. 472-481; reference on p. 475.

² W. S. Tower: *Scientific Geography: The Relation of Its Content to Its Subdivisions*, *Bull. Amer. Geogr. Soc.*, Vol. 42, 1910, pp. 801-825; reference on p. 818.

The large factors to be dealt with in economic geography fall into two categories, environments, which are fundamentally physical, and economies, which are largely psychical, and each demands rational classification.

CLASSIFICATION OF ENVIRONMENTS

The character of an environment is determined by a complex of pedographic,³ hydrographic, climatic, phytographic, and zoögraphic conditions combined in vast variety. As I have argued at length elsewhere,⁴ the general resultant of environmental conditions is best expressed in terms of phytography, because the vegetation of a region is an index (1) of its relief, soil, and climate, and (2) of its fitness to support animal and human life. Therefore environments may be broadly classified according to vegetation and subdivided according to other conditions which impose upon them locally a special character. This is shown in Table I.

TABLE I—CLASSIFICATION OF ENVIRONMENTS

	TYPICAL ECONOMIES (Notation of Table II)		TYPICAL ECONOMIES (Notation of Table II)
A GENERAL CONDITIONS		B SPECIAL CONDITIONS	
I Phytographic		II Morphologie	
a Woodland		13 Mountains.....	4, 5, 6, V
1 Tropical Rain Forest.....	1, 2, 3, 4	14 Plains.....	B, C, D
2 Monsoon Forest.....	1, 2, 3, 4, 7	III Regolithic *	
3 Temperate Rain Forest.....	9, 10, 11, 12	15 Alluvial.....	III, IV
4 Temperate Summer Forest.....	13, 14, 15	16 Glacial.....	
5 Coniferous Forest.....	2, 3, 4, 12	IV Marine	
6 Tropical Dry Forest.....	7, 8, 9	17 Interior.....	D
b Grassland	11, 14	18 Coastal.....	
7 Savanna.....	3, 7, 14	19 Peninsular.....	
8 Prairie.....	9, 14, 15	V Mineral	
9 Steppe.....	14	21 Coal.....	5, 6, C
10 Tundra.....	3, 14	22 Iron.....	
c Desert		23 Gold.....	
11 Warm Desert.....	7, 14	etc.	
12 Cold Desert.....	2, 3		

* *ῥῆγος*, a rug, a blanket: i.e. "blanket-rock" (F. J. H. Merrill).

CLASSIFICATION OF ECONOMIES

A classification of economies, based in part upon Friedrich's "Wirtschaftsgeographie"⁵ is shown in Table II. The letters and numbers of the tables furnish a notation by which they can be correlated.

³ *πεδον*, the ground, the soil.

⁴ Regional Geography, *Journ. of Geogr.*, Vol. 11, 1912-13, pp. 73-75, reference on p. 74; The New Departure in Geography, *ibid.*, Vol. 11, 1912-13, pp. 145-151 and 177-180, reference on p. 178.

⁵ Ernst Friedrich: Allgemeine und spezielle Wirtschaftsgeographie, 2nd edit., Göschen, Leipzig, 1907.

TABLE II—CLASSIFICATION OF ECONOMIES

	TYPICAL ENVIRONMENTS (Notation of Table I)		TYPICAL ENVIRONMENTS (Notation of Table I)
A COLLECTIVE		C CONSTRUCTIVE	
I Primitive		V Manufacturing.....	13, 21, 22
1 Plucking.....	1, 2	VI Building.....	.....
2 Fishing.....	{ 1, 2, 5, 12, 18, 19, 20,	VII Engineering.....	.....
3 Hunting.....	{ 3, 4, 5, 7, 8, 12, 13	16 Mechanical.....	.....
II Scientific		17 Chemical.....	.....
4 Lumbering.....	3, 4, 5	18 Architectural.....	.....
5 Mining.....	13, 21, 22	19 Hydraulic.....	.....
6 Quarrying.....	.....	20 Naval.....	.....
		21 Mining.....	.....
		22 Military.....	.....
		23 Civil.....	.....
		24 Sanitary.....	.....
B PRODUCTIVE		D DISTRIBUTIVE.....	14, 18, 19, 20
III Agriculture		VIII Commerce.....	.....
7 Hoe Culture.....	1, 2, 7, 11	IX Finance.....	.....
8 Garden Culture.....	2, 6, 15	X Transportation.....	.....
9 Field Culture.....	{ 3, 4, 8, 14 15, 16	XI Communication.....	.....
10 Plantation Culture.....	2, 3, 7	E PERSONAL	
11 Horticulture.....	.....	XII Domestic Service.....	.....
12 Forestry.....	4, 5	XIII Professional Service.....	.....
13 Plant Breeding.....	.....	25 Medical.....	.....
IV Animal Industry		26 Legal.....	.....
14 Herding.....	9, 10, 11	27 Political.....	.....
15 Stock breeding.....	.....	28 Educational.....	.....
		29 Literary.....	.....
		30 Artistic.....	.....
		31 Religious.....	.....
		32 Military.....	.....

CLASSIFICATION OF ECONOMIC SOCIETIES

It is desirable to take account not only of environments and economies but also of their grand product and resultant, economic societies. They may be graded like organisms, according to their complexity and efficiency in the utilization of the environment. The following scheme is substantially that of Herbertson,⁶ in which, however, I have made some important modifications. See Table III.

TABLE III—CLASSIFICATION OF ECONOMIC SOCIETIES

A SIMPLE, OR AUTARKEAN,* SOCIETIES (independent, self-supporting, nomadic, sparse)	B COMPLEX, OR ALLELARKEAN,† SOCIETIES (interdependent, fixed, dense, civilized)
1 Collective	4 Productive
2 Hoe Cultural	5 Productive and Distributive
3 Pastoral	6 Constructive and Distributive
	7 Productive, Constructive, and Distributive (potentially self-supporting, practically dependent)

* χώρα ἀνταρκής, a country that supplies itself (Thucydides).

† ἀλλήλων ἄρκεω, of use to one another.

(A) *Simple Societies* depend upon the resources of their immediate environment, which are either meager or imperfectly utilized. Their wants

⁶ A. J. Herbertson: *A Handbook of Geography*, 2 vols., Nelson, London, 1911-12; reference in Vol. 1, pp. 123-129.

are few and their industries rudimentary. Foreign trade is insignificant. They are independent, self-supporting, and usually nomadic. The density of population rarely rises to one to the square mile.

There are three types of prevailing economy:

(1) *Collective*. These are societies which by plucking, fishing, and hunting use and destroy natural resources, producing nothing. They inhabit the extremes of the world, cold deserts, tundras, coniferous forests, tropical forests, and coastal and insular environments in all zones.

(2) *Hoe Cultural*. These are societies which combine hoe culture with collective economy and herding. They occupy savannas, tropical islands, and the margins of warm deserts and forests. Their population is more dense than that of other simple societies.

(3) *Pastoral*. These are societies whose main resource is grass and domestic animals. They inhabit steppes, savannas, and tundras.

(B) *Complex Societies* depend upon other societies to supply a large part of their wants, which are numerous and varied. Foreign commerce is essential. The resources of their own environment are exploited and sometimes fully utilized, and industries are moderately to highly developed. They are interdependent upon one another. While their homes are fixed, they are individually the most nomadic of peoples. They flourish in the temperate forests and grasslands but are extending their economies and crowding on and out all simpler societies. There are four types:

(4) *Productive*. These are societies which produce foodstuffs and raw materials at home and obtain limited manufactures by trade. Their density may be very high. The best examples are to be found in China and India.

(5) *Productive and Distributive*. These are societies which export a large part of their foodstuffs and raw materials and import corresponding values of manufactured goods. When agricultural, they have a large excess of rural over urban population. They are young and sparsely populated countries, in many cases colonial. Australia, South Africa, and Argentina are examples. They are complementary to and dependent upon those of the next type.

(6) *Constructive and Distributive*. These are societies which import most of their foodstuffs and raw materials and export manufactures. They live chiefly on coal and iron and are very wealthy, but their resources are exhaustible. A coastal or insular environment is essential. The density of population is high with a large excess of urban. Great Britain and Belgium are the leading examples.

(7) *Productive, Constructive, and Distributive*. These are societies which export and import foodstuffs, raw materials, and manufactures. They practice all economies and exploit all kinds of resources. Commerce is extensive and varied. Rural and urban populations are nearly balanced. They might be self-supporting but actually enjoy all the resources and products of the world. Their wealth is capable of indefinite increase.

These, the most complex of societies, are possible only in highly complex environments. Of such the United States is, far and away, the best example. The only environment comparable with the American is the Russian, but many of its economies are undeveloped. On a small scale, France and Germany belong to the same class. To the latter must be awarded the palm for thoroughness and completeness in the utilization of an environment in many respects inferior.

REFLECTIONS

Environments are as stable and enduring as other large features of nature; economies are subject to the vicissitudes of human history. Consequently they may be extinct, kinetic, or potential. The environment of Mesopotamia has remained essentially the same since Adam and Eve dwelt in the Garden of Eden. The intensive agriculture of the Chaldeans and Babylonians, almost extinct under the Turks, is still potential and may become again kinetic under British or German influence. The Chinese environment has changed only by the removal of forests, and Chinese economy has proved the most enduring now in existence. It would be difficult to show how the environments of North America have changed in any important particular in the last thousand years, but the collective economy of the Indian has been displaced by the highly complex economy of the Americans, which was potentially present in pre-Columbian times. The economies of half the world are still potential.

People are civilized in proportion as they adapt themselves to a large and varied environment and to the complexity of their economy.

(II) THE ECONOMIC REGIONS OF THE UNITED STATES

In extent and complexity the United States is comparable with the whole of Europe. To deal with it from the standpoint of economic geography it is necessary to divide it into economic regions, based on differences of natural environment. The imperative, primary division is into east and west; the one, low, smooth, humid, and Atlantic; the other, high, rough, arid, and Pacific. The dividing line is a delightfully critical one, where the isohypse of 2,000 feet and the isopleth of 20 inches nearly coincide with the median meridian of 100° W. The large physiographic and climatic features trend north and south and vary east and west. My scheme of subdivisions is shown on the map, Figure 1, where, for statistical and other obvious reasons, state boundaries are used. Each border state is included in the region where its principal economies place it, and the resulting discrepancies are not very serious.

THE MIDDLE WEST

The economic foundation, core, and center of gravity of the country is the Middle West. It has an almost ideal allotment of coniferous forest,

summer forest, and prairie, passing into steppe on the west. Two-thirds of it is a plain of glacial drift. There are no mountains, few hills, and dissected uplands occur only in the southeast and southwest. It is far inland, but the Laurentian lakes, with their connecting rivers and canals, give the region an almost coastal character. Coal, iron, and copper are abundant and conveniently located. The region is lacking in no prime resource except water power.

The economies of the Middle West are developed to an extent which makes it the granary, smoke-house, cellar, and pantry of the American homestead. Constructive economies are not far behind productive, and dis-

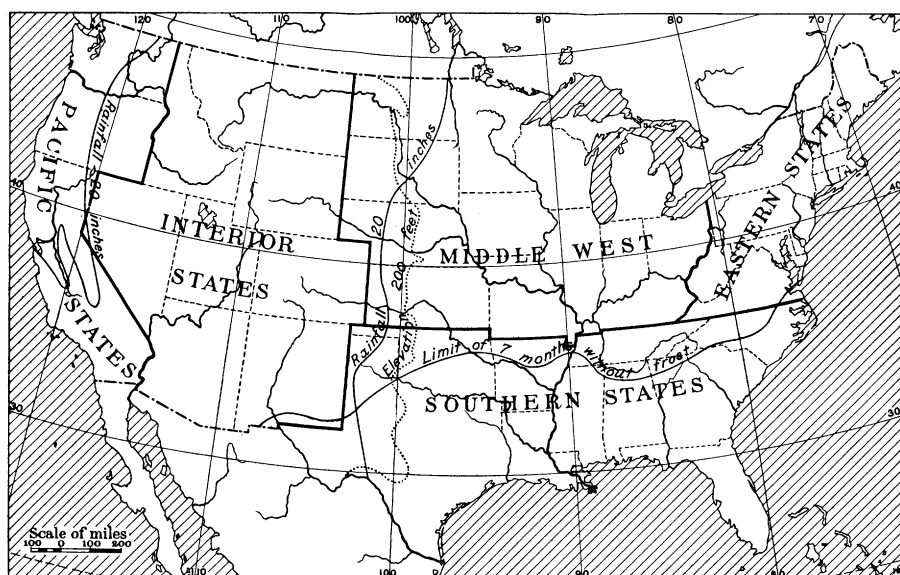


FIG. 1—Map of the economic regions of the United States as used in the present paper. Scale, 1:40,000,000. (Note: On the dotted line indicating elevation near the 100th meridian, for "200 feet" read 2,000 feet.)

tribution is as easy and active as is possible anywhere on land. The lines in which the Middle West takes a high rank are shown in Table IV, standing being expressed in percentages of the total for the United States.

To summarize the table, the Middle West has approximately one-fourth the area, one-third the population, one-half the improved land and two-fifths of the railroad mileage of the United States. It furnishes 70 per cent of the grain and meat, 60 per cent of the butter, cheese, and flour, 50 per cent of the potatoes, hay, tobacco, and domestic animals, 85 per cent of the iron ore, and 30 per cent of all minerals. It manufactures 70 per cent of the agricultural implements, vehicles, and distilled spirits, 50 per cent of clay products, 40 per cent of foundry products, cement, and soap, 35 per cent of iron and steel and printed matter, and 35 per cent of all manufactures. Its total wealth calculated in several different ways is about 40 per

TABLE IV—LEADING ECONOMIC FACTORS OF THE MIDDLE WEST

	YEAR	PER- CENTAGE OF TOTAL FOR U.S.		YEAR	PER- CENTAGE OF TOTAL FOR U.S.
Land area.....	....	27	Iron ore (tons).....	1913	85
Population.....	1910	35	Zinc (tons).....	1913	52
Improved land.....	1910	58	Clay products (value).....	1913	49
Rural population.....	1910	57*	Cement (value).....	1913	40
Corn (bushels).....	1912	71	All minerals (value).....	1913	29
Wheat (bushels).....	1913	70	Agricultural implements (value)	1909	79
Oats (bushels).....	1912	80	Meat (value).....	1909	70
Barley (bushels).....	1912	68	Automobiles (value).....	1909	73
Rye (bushels).....	1913	65	Carriages and wagons (value)...	1909	63
Tobacco (pounds).....	1912	52	Distilled spirits (gallons).....	1913	69
Potatoes (bushels).....	1912	50	Butter and cheese (value).....	1909	63
Hay (tons).....	1912	48	Flour (value).....	1909	60
Swine (number).....	1912	64	Fermented liquors (barrels).....	1913	44
Horses (number).....	1912	59	Pig iron (tons).....	1913	39
Milch cows (number).....	1912	51	Pig iron (value).....	1909	34
Neat cattle (number).....	1912	42	Steel (value).....	1909	36
Animals sold and slaughtered (value)	1909	52	All manufactures (value).....	1909	35
Fowls and eggs (value).....	1909	54	Railroad mileage.....	1913	40
Dairy products (value).....	1909	47	Natural wealth produced.....	1909-10	48
All animal products (value).....	1909	60	Net wealth produced.....	1909-10	43
All crops (value).....	1909	49	Total wealth.....	1912	39
All farm products (value).....	1909	53			
Farm property (value).....	1909	60			

* Per cent of region.

cent of the total of the United States and greater than that of any other region. Its environment is the best in America and one of the best in the world. Nowhere else are the productive, constructive, and distributive economies more happily combined. As an economic unit, it is an epitome of the whole country and a particularly young and vigorous specimen of the highest class of economic societies.

THE EASTERN STATES

The Eastern States are characterized by generally rough relief, with a narrow coastal plain and narrower lake plain. The environment is mildly mountainous and strongly coastal. Its coniferous and summer forests have been important in the past. Rough relief, inferior soils, and lack of plains and prairies are handicaps to agriculture. Water power, vast stores of anthracite and bituminous coal, and the Atlantic coast line, with its numerous tidal inlets, are

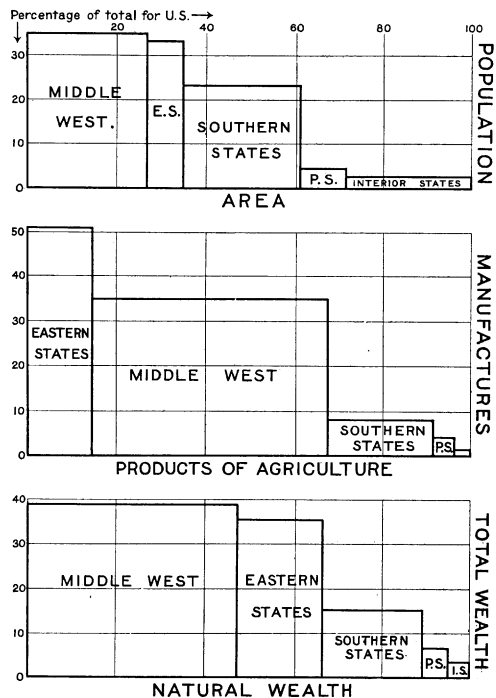


FIG. 2.—Diagram showing the economic rank of the five economic regions of the United States.

controlling factors. The vital importance of the Laurentian gap, giving access to the food supplies and iron ore of the Middle West, can hardly be overestimated. While field culture, gardening, horticulture, and dairying are not negligible, the region is marked out by nature as the seat of manufacture and commerce. With a start of two centuries ahead of the rest of the country and with Europe close by to furnish an unlimited supply of cheap labor, the result is as natural as the march of the day from sunrise to noon. The economic rank of the Eastern States in their leading lines is shown in Table V.

TABLE V—LEADING ECONOMIC FACTORS OF THE EASTERN STATES

	YEAR	PER- CENTAGE OF TOTAL FOR U.S.		YEAR	PER- CENTAGE OF TOTAL FOR U.S.
Land area.....	.....	8	Ship building (value).....	1909	60
Population.....	1910	33	Paint and varnish (value).....	1909	49
Urban population.....	1910	67*	Fermented liquors (gallons).....	1914	48
Of foreign parentage.....	1910	53*	Printing and publishing (value).....	1909	52
Employed in manufacture.....	1910	40*	Foundry & mach. shop products (val.)	1909	50
Silk (value).....	1909	97	All manufactures (value).....	1909	51
Woolen goods (value).....	1909	95	Coal (value).....	1913	60
Dyeing and finishing (value)....	1909	92	Natural gas (value).....	1913	66
Carpets and rugs (value).....	1909	92	Stone (value).....	1913	47
Hosiery and knit goods (value)...	1909	78	Cement (value).....	1913	40
Cordage and twine (value).....	1909	74	All minerals (value).....	1913	37
Clothing (value).....	1909	72	Apples (bushels).....	1914	49
Cotton goods (value).....	1909	63	Dairy products (value).....	1909	34
Boots and shoes (value).....	1909	73	Orchard fruits (value).....	1909	31
Leather (value).....	1909	65	Potatoes (bushels).....	1912	31
Gloves and mittens (value).....	1909	62	Hay (tons).....	1912	26
Paper and wood pulp (value)....	1909	70	Tobacco (pounds).....	1912	26
Electrical machinery (value)...	1909	70	All farm products (value).....	1909	15
Chemicals (value).....	1909	69	Railroad mileage.....	1913	17
Glass (value).....	1909	58	Foreign commerce.....	1913-14	64
Steel (value).....	1909	60	Imports.....	1913-14	77
Pig iron (value).....	1909	51	Total wealth.....	1912	35
Pig iron (tons).....	1913	50			

* Per cent of region.

The Eastern States, with one-twelfth the area of the United States, have one-third the population, 67 per cent of which is urban and 53 per cent of foreign parentage. Their manufacture of textiles ranges from 63 per cent of cotton goods to 97 per cent of silk. They make 70 per cent of the leather, leather goods, and clothing, 60 per cent of steel and glass, 55 per cent of paper, chemicals, and electrical machinery, 50 per cent of pig iron, foundry products, soap, fermented liquors, paint and varnish, build 60 per cent of the ships, do more than half the printing and publishing, and turn out more than half the value of all manufactures. They mine 60 per cent of the coal, 66 per cent of the natural gas, and 38 per cent of all minerals. With 16 per cent of the railroad mileage, they have 64 per cent of the foreign commerce and 77 per cent of the imports.

They contain the leading seaport and the second largest city in the world, which has a real estate valuation greater than that of all the wealth of the western half of the United States. This accumulation may be regarded as profits derived from the elaboration and exchange of the

products of the Middle West. The total wealth of the Eastern States is about 35 per cent of that of the United States and is second only to that of the Middle West. They belong to the constructive and distributive class of economic societies, are already a formidable rival of Great Britain for first place in that class, and the end is not yet.

THE SOUTHERN STATES

The Southern States look on the map as if they had been shorn as mercilessly as some of the European countries will be at the close of the present war. But in economic geography, political and social prejudices do not count in the face of natural and economic conditions. Geographically, the Southern States are bounded on the north by the limit of seven months without frost and are distinguished as being the realm of King Cotton. More than half their area is coastal plain, occupied largely by an anomalous coniferous forest in the warm temperate zone, where, according to rule, a temperate rain and summer forest belongs. The Appalachian Highland thrusts its salutary bulk into the plain, and the wide, alluvial valley of the lower Mississippi cuts it in two. In the west the body of the giant among states extends well into the arid plateaus. The long coast line on the Atlantic and on the American Mediterranean has failed, largely on account of shallow coast waters, to produce an adequate response. In the days of slavery the economy of the Southern States was singularly simple, artless, successful, and, in the long run, suicidal. Cotton was grown on shifting plantations and exchanged in raw bulk for almost everything else. This one-crop agriculture persists and is still the bane of Southern economy. Citrus fruits, sugar cane, and rice flourish in strictly limited areas and introduce local variations of the one-crop system. The boll weevil and the European war may prove efficient blessings by breaking up the one-crop system and compelling the people to raise at least corn and cattle enough to feed themselves.

Manufacturing has grown to relatively large proportions but is still based on cotton. The water power of the Highland has been harnessed to a network of hydro-electric power transmission said to be the most extensive in the world. Iron and coal in Alabama and petroleum in Oklahoma, Texas, and Louisiana induce local eruptions of collective and constructive activity. The coniferous and hardwood forests of the South are proving a widow's cruse and saving the Middle West and the Eastern States from a timber famine.

After all this is said, it remains to say that the Southern States are the most strongly agricultural region in the country, with a rural population of 80 per cent, 60 per cent of employed persons on the land and only 2 per cent foreign born. What the Panama Canal will do to them may be only conjectured, but their opportunities for commerce are beyond calculation.

TABLE VI—LEADING ECONOMIC FACTORS OF THE SOUTHERN STATES

	YEAR	PER- CENTAGE OF TOTAL FOR U. S.		YEAR	PER- CENTAGE OF TOTAL FOR U. S.
Land area.....	....	26	All farm products (value).....	1909	24
Population.....	1910	24	Fertilizers (value).....	1909	48
Rural population.....	1910	81*	Cotton goods (value).....	1909	35
White population.....	1910	66*	All manufactures (value).....	1909	8
Foreign born.....	1910	2*	Petroleum (value).....	1913	36
Employed on land.....	1910	59*	All minerals (value).....	1913	10
Cotton (bales).....	1911	99	Timber and lumber (feet).....	1913	47
Rice (bushels).....	1913	99	Railroad mileage.....	1913	27
Oranges (value).....	1909	26	Foreign commerce.....	1913-14	27
Mules (number).....	1909	65	Exports.....	1913-14	31
Neat cattle (number).....	1909	30	Natural wealth produced.....	1909-10	23
Improved land.....	1910	24	Total wealth.....	1912	15

* Per cent of region.

The Southern States have approximately one-fourth the area and population of the United States. They raise practically all the cotton and rice and 65 per cent of the mules. Neat cattle, mostly in Texas, amount to 30 per cent, oranges to 26 per cent, corn and tobacco to 22 per cent, and all crops to 29 per cent. Their only notable manufactures are cotton goods, 35 per cent, and fertilizers, 48 per cent. They cut 47 per cent of the timber and lumber and have 27 per cent of the railway mileage. Their foreign commerce is 21 per cent, in exports 31 per cent. Their total wealth cannot be rated higher than 16 per cent and is the lowest per capita in the United States. The Southern States are on their way out of an extreme Australian type of economy toward the higher type which their environment favors.

The western half of the United States seems to have been thrown in for good measure, heaped up, pressed down and running over. The best statistics now available give it a present value of about 10 per cent. Let us not hint that it is superfluous, but the question, What difference would it make if the Pacific Coast were east of the Rocky Mountains? might afford entertainment for the idle hour of a speculative geographer.

THE INTERIOR STATES

The Interior States are occupied by high, arid plateaus, and saved from desert conditions by a broad central backbone of lofty mountains, which act as a condenser and furnish water and impetus for streams which overcome all obstacles on their way to the Gulf and the Pacific. They almost touch the sea on the southwest, but have no ports or navigable rivers, except the Columbia. The mountain barrier on the west cuts them off from the softening and enriching influences of the Pacific, and the environment is one of mountains, steppe, and desert, which shade into one another with every degree of blending.

While the area is 29 per cent, the population is less than 3 per cent, with a density of three to the square mile. The 64 per cent of urban population

TABLE VII—LEADING ECONOMIC FACTORS OF THE INTERIOR STATES
AND THE PACIFIC STATES

INTERIOR STATES			PACIFIC STATES		
	YEAR	PER- CENTAGE OF TOTAL FOR U.S.		YEAR	PER- CENTAGE OF TOTAL FOR U.S.
Land area.....	....	29	Land area.....	....	10
Population.....	1910	3	Population.....	1910	5
Urban population.....	1910	64*	Urban population.....	1910	57*
Silver (value).....	1913	95	Foreign born.....	1910	23*
Copper (pounds).....	1913	81	Oranges (value).....	1909	74
Gold (value).....	1913	69	Grapes (value).....	1909	51
Lead (tons).....	1913	62	Timber and lumber (feet).....	1913	21
All minerals (value).....	1913	16	Petroleum (barrels).....	1913	39
Sheep (number).....	1913	44	Petroleum (value).....	1913	19
Wool (value).....	1909	45	Gold (value).....	1913	30
Neat cattle (number).....	1913	14	Canning and preserving.....	1909	29
Railroad mileage.....	1913	10	Railroad mileage.....	1913	6
Total wealth.....	1912	4	Foreign commerce.....	1913-14	6
			Total wealth.....	1912	7

* Per cent of region.

does not mean large cities, but is an index of general sparseness. Crops and manufactures are relatively negligible. While herding is the most general economy, cattle amount to only 15 per cent. The only large figures are 44 per cent for sheep and 45 per cent for wool. Nearly 10 per cent of the employed are miners. The region produces 95 per cent of the silver, 81 per cent of the copper, 69 per cent of the gold, 62 per cent of the lead and 38 per cent of the zinc, but the total minerals amount to only 16 per cent. The steppe is being invaded by dry farming and the desert by irrigation. The total wealth is about 3.5 per cent, but is higher per capita than in the Middle West. Among invaluable riches not subject to appraisal are sanitary air, scenery, geological sections and fossils.

The Interior States are in an unstable and transitional stage of economic development. The value of crops now exceeds that of cattle and sheep. Water power is the only resource which can ever lift them out of a low rank among complex economic societies and make them more than tributary and supplemental to their richer neighbors. Perhaps they are worth the space they occupy as the home of the traditional Indian and cowboy, as a tuberculosis hospital, and as a field for desert botanical laboratories, university scientific excursions, and the promotion of railway engineering.

THE PACIFIC STATES

The Pacific States are a land of contrasts, where the highest and the lowest, the driest and the wettest, the hottest and the most temperate, bare desert and impenetrable forest occur in proximity. The sea, desert, palm groves, mountains, fir forests, and summer snows are visible in the same landscape. The region is a narrow strip between the mountains and the sea, 1,200 miles long and 300 miles wide, in which all sorts of gradients are steeper crosswise than lengthwise. The phytographic environment

ranges from warm desert through tropical dry forest to coniferous forest. The large coastal factor is peculiar in being generally unavailable but possessing two of the most spacious harbors in the world and a great river mouth.

In grain crops and domestic animals their rank is low, but in semi-tropical fruits high, ranging from 51 per cent of grapes to 74 per cent of oranges and a monopoly of olives and figs. The leading minerals are petroleum, 40 per cent in quantity although but half that in value, and gold, 30 per cent. The only notable line of manufacture is canning and preserving, amounting to 30 per cent. The 20 per cent of timber and lumber now cut is but a sliver from the richest coniferous forest in the world. If the petroleum holds out, it will make up largely for the lack of coal, and, if it gives out, the mountain streams can furnish hydro-electric power sufficient for a dense manufacturing population. From the economic standpoint cheap labor is the one thing most needed. It knocks at the doors and almost batters them down but is denied admission. The most enduring natural assets of the Pacific States seem to lie in their unrivaled forests, Mediterranean climate, and the Pacific Ocean. Their foreign commerce is now 6 per cent, or a little less than that of the Middle West. The total wealth, about 7 per cent, is the highest per capita in the United States.

As an economic unit the region is difficult to classify, but seems to be a youthful and precocious specimen of the highest type, in which productive, constructive, and distributive economies will at maturity be highly developed. It is a rough and narrow strip with small hinterland, separated by a thousand miles of mountains and desert from the rich communities of the East, to which it is artificially tied. But it faces and must control the commerce of the Pacific, which is said to be the ocean of the future. If a recent economist⁷ is right, the Panama Canal and petroleum fuel will make freight and passenger rates as low between San Francisco and Liverpool as between New York and Liverpool, the treasures of the Atlantic will be open, and the Pacific Coast will experience such a boom in immigration and commerce as the world has never seen. It is the big youngster of Uncle Sam's family, who is rapidly outgrowing the awkwardness and bluster of adolescence and promises to attain imposing proportions and dignity. Nevertheless, if I may claim the right of a mere geographer to indulge in scientific prophecy, I see no reason to withdraw the forecast, made on a previous occasion,⁸ that "if there are ever as many people and as much wealth between Los Angeles and Prince Rupert as between Chesapeake Bay and the Gulf of St. Lawrence, it will be when San Francisco is the capital of Japanese or Chinese America."

⁷ R. L. Dunn, *Senate Doc. No. 540, 63d Congr., 2nd Session.*

⁸ The North America of Today and Tomorrow and Indiana's Place in It, *Proc. Indiana Acad. of Science*, 1911, pp. 37-54; reference on p. 51.